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# RACK AND DISINFECTOR FOR CLINICAL THERMOMETERS.

## A CONVENIENT PORTABLE APPARATUS.

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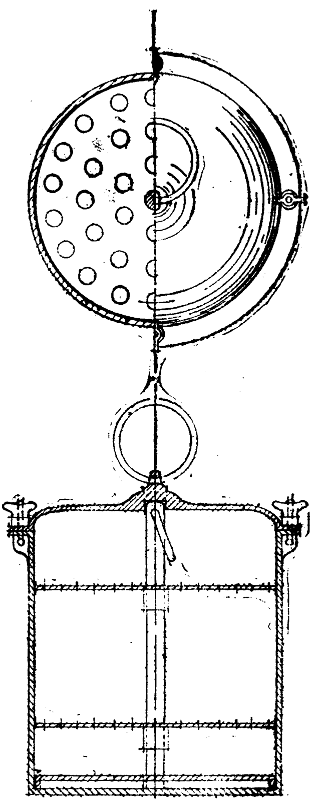
The necessity for a convenient portable container and disinfector to handle the large number of clinical thermometers very frequently required for use in taking the temperatures of passengers and crews undergoing quarantine inspection, as well as of persons detained for observation at a quarantine station or detention camp, has often been apparent. On many occasions, in quarantine work, the temperatures of scores of passengers are taken simultaneously, or as nearly so as the number of thermometers carried by the boarding or inspecting officer will permit. Since it is the usual practice to carry such thermometers in their individual cases, to prevent breakage, and to disinfect or cleanse each one before passing it to the passenger or member of the crew, repeating the operation after recording the temperature reading and before returning the thermometers to their cases, it can readily be seen that there is considerable labor involved and some loss of time incident to this process.

With a view of overcoming these difficulties, at least in a measure, the writer designed and had made a model of a container and rack having a capacity of 40 thermometers, which has been used successfully at the San Juan quarantine station for some months past.

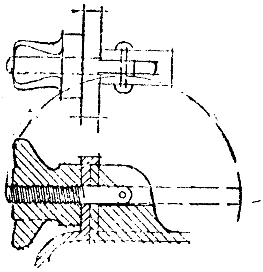


Upper.—Plan of container-rack and cover.
Lower.—Section through container.

As will be seen from the drawings, the thermometers are held securely but separately in place by means of two perforated disks, through which they pass, while a third disk serves as a bottom plate to prevent them from slipping through. This latter disk has a few perforations, so as to offer but little resistance and permit the rack to enter easily when the container is filled with the liquid. These perforations, however, are not coincident with those of the upper disks.

The center post, or main stem, not only serves as a frame to hold the disks of the rack together, but, with its ring inserted in the upper end, permits of its use as a handle. The thermometer does not come in contact with the hands of any one except the person whose temperature is being taken.

The container is simply a cylindrical jar, equipped with a pair of hinged thumbscrews for use in fastening on the lid or top, so that it will be absolutely water-tight. The lid should be provided with a rubber gasket. The lid has also a slot in the center, into which the main stem of the rack slips, thus preventing any movement of the rack in the container when the lid has been screwed on.



Section and elevation of a detail of sealing device.

The rack and container may be made of aluminum of medium weight or a good quality of enameled ware. The hinged thumbscrews and sockets, however, should be made of brass. The container of the one in use at present at San Juan quarantine station is a glass specimen jar, which serves the purpose very well for station use, but on account of its fragile character and liability to breakage, it is not well adapted for use aboard vessels. The metallic container is practically indispensable for use on boarding duty.

The method of using this apparatus, in order to obtain the best results, is as follows:

The rack is loaded with its quota of thermometers (for this model 40), each of which has been shaken so that the column of mercury registers not higher than normal. The container is then partially filled with a formalin solution (or whatever other disinfectant it is customary to use) to about four-fifths of its capacity. This has been shown by experience to be the quantity of solution necessary to completely submerge the thermometers, without slopping over, when the loaded rack is lowered into the container.

When the rack is inserted, the disinfecting solution will reach every part of each thermometer. The perforations in the disks, while holding the thermometers in place, permit free and thorough contact with the solution and an efficient disinfection. By giving the rack a twirling movement, the cleansing process may be made even more effective. It is also the usual practice to screw on the top of the container and keep the thermometers in the solution until a short time before they are required for use. The rack is then taken out and rinsed with sterile water to remove the unpleasant taste or odor of the disinfectant, and the thermometers are allowed to dry in the rack without being touched with the hands.

If the thermometers are required for use aboard ship, the rack should be placed in a dry container, and the lid or top screwed on. The thermometers are then ready to be handed out to each passenger without further preparation.

A pair or several pairs of racks and containers should be provided for boarding officers at stations where temperatures of a considerable number of passengers or crews have to be taken. One container will hold the dry sterile thermometers and the other one a loaded rack in the disinfecting solution. These containers could be carried in a leather or canvas case and slung across the shoulder, as is done with field glasses.

The advantage of using the apparatus in pairs, one with the solution and the other dry, is that if but 40 or a lesser number of thermometers be required those in the dry container are available for immediate use, and if more than that number those in the rack in the solution jar may be removed, rinsed, and dried during the time that the first 40 are being passed around. The first 40 may in turn be loaded in their rack and placed in the disinfectant should a still larger number of thermometers be required.

All thermometers registering more than normal should be shaken down before being placed in the rack, thus doing away with the necessity of having to touch any of them to do this after they have been disinfected.

It is believed that this apparatus will not only save considerable time in routine practice at quarantine stations and in large hospitals, but that it will enable one to disinfect thermometers more thoroughly and with less danger of breakage than is possible under ordinary methods. In addition it will prevent them from becoming contaminated after disinfection through careless handling or by inclosing them in soiled thermometer cases.